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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,486	01/09/2001	Kari T. Teraslinna	05043P011	6169

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EXAMINER	
SALAD, ABDULLAHI ELMI	
ART UNIT	**PAPER NUMBER**
2157	6

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/764,486	TERASLINNA, KARI T.	
	Examiner	Art Unit	
	Salad E Abdullahi	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This application has been reviewed. Original claims 1-22 are pending. The rejection cited stated below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-10 and 12-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Vuppala et al., Layer-3 Switching Virtual Network Port: An Inter-network Switching Framework [hereinafter Vuppala].

As to claim 1, Vuppala discloses an apparatus (see fig. 1, the VPNPacketHandler) comprising:

a flow manager (control procedure) (see page 643, lines 16-18 and page 642, col. 2, paragraph 3);

a remote logical port (RLP) model (virtual network port) to model a remote physical port (RPP) (remote physical port) (see page 642, col. 2, paragraph 3, lines 1-3); and

a trunk scheduler (packet scheduler) to schedule transmission units direct to the remote physical port (see page 646, col. 2, paragraph 4, lines 1-13).

As to claim 2, Vuppala discloses the apparatus of claim 1 wherein the flow manager comprises: a flow shaper (see page 646, col. 2, paragraph 4, lines 1-13); and

a flow parameter database (see page 648, lines 3-4).

As to claim 3, Vuppala discloses the apparatus of claim 1 wherein the flow manager comprises: a discard policy that is able to differentiate between the discard rates of at least two flows (see page 643, paragraph 2); and
a flow parameter database (see page 648, lines 3-4).

As to claim 4, Vuppala discloses the apparatus of claim 1 wherein the flow manager comprises: an RLP scheduler (see page 646, paragraph 4); and
a flow parameter database (see page 648, lines 3-4).

As to claim 5, Vuppala discloses the apparatus of claim 2 wherein the flow manager further comprises: an RLP scheduler (see page 646, paragraph 4).

As to claim 6, Vuppala discloses the apparatus of claim 1 wherein the RLP model comprises:
an RLP data structure to hold data indicating characteristics of the RPP(see page 648, lines 3-4); and
an RLP traffic shaper to make a transmission unit eligible consistent with the characteristics of the RPP (see page 646, paragraphs 3 and 4).

As to claim 7, Vuppala discloses the apparatus of claim 5 wherein the flow manager

comprises a plurality of queues, one queue for each flow directed toward the RPP (see 643, column 2, paragraph 2).

As to claim 8, Vuppala discloses the apparatus of claim 7 wherein shaping and scheduling are performed by manipulating pointers to the queues (see page 646, column 2 paragraphs 3 and 4).

As to claim 9, Vuppala disclose the apparatus of claim 1 wherein the trunk scheduler statistically multiplexes an aggregate of the flows directed to a plurality of RPPs (see fig. 1 and page 643, column 2, paragraph 3).

As to claim 10, Vuppala discloses the apparatus of claim 1 wherein the trunk scheduler operates in a weighted round robin non-work conserving manner (see page 646, column 2, paragraph 4).

As to claim 12, Vuppala discloses a system comprising:

a broadband communication link (see fig. 1);

a demultiplexer (VPN PacketHandler, Node N1) coupled to a plurality of physical ports and the broadband communication link (see page 643, column 2, paragraph 2); and

a network element Node N2) coupled to the communication link, the network element modeling the plurality of physical ports and providing a two-tier hierarchy of shaping and scheduling of flows directed to the plurality of physical ports link (see page 643, column

2, paragraph 2 and page 646, column 2, paragraphs 2 and 3) .

As to claim 13, Vuppala discloses the system of claim 12 wherein the network element comprises: a first flow shaper to shape a plurality of flows directed to a remote physical port (RPP) (see fig. 2 and page 643, column 2, paragraph 2 and page 646, column 2, paragraphs 2 and 3);

a first scheduler to schedule the flows shaped by the first flow shaper to yield a scheduled flow page 646, column 2, paragraphs 2 and 3);

a second flow shaper to shape the scheduled flow page 646, column 2, paragraphs 2 and 3); and

a trunk scheduler to schedule the flow shaped by the second flow shaper for transmission to the RPP page 646, column 2, paragraphs 2 and 3).

As to claim 14, Vuppala discloses the system of claim 12 further comprising: a plurality of data structures (table) populated with data indicating characteristics of a remote physical port (RPP) (see page 642, column 2, paragraph 4 to page 643, column 1, lines 1-29 and page 648, column 1, lines 3-4); and

a database populated with flow parameters (see page 642, column 2, paragraph 4 to page 643, column 1, lines 1-29 and page 648, column 1, lines 3-4).

As to claim 15, Vuppala discloses the system of claim 14 wherein a one-to-one correspondence exists between RLP data structures and RPPs (see fig.1).

As to claim 16, Vuppala discloses system of claim 13 wherein the network element comprises: a queue for each flow directed at a physical port and wherein shaping and scheduling are performed (see page 643, column 2, paragraph 3).

As to claim 17, Vuppala disclose a method comprising:
modeling a plurality of remote physical ports (RPP) as a plurality of remote logical ports (RLP) (see fig. 1 and page 643, column 2, paragraph 2 and page 646, column 2, paragraphs 2 and 3); and
reflecting quality of service from a control aggregator to the plurality of RPPs (see page 646, column 2, paragraphs 2 and 3).

As to claim 18, Vuppala discloses the method of claim 17 wherein reflecting comprises: shaping a plurality of flows directed to a RPP into a plurality of shaped flows (see fig. 1 and page 643, column 2, paragraph 2 and page 646, column 2, paragraphs 2 and 3); scheduling the shaped flow into a scheduled flow; shaping the scheduled flow into a shaped scheduled flow (see fig. 1 and page 643, column 2, paragraph 2 and page 646, column 2, paragraphs 2 and 3); and scheduling the shaped scheduled flow for transmission to the RPP(see fig. 1 and page 643, column 2, paragraph 2 and page 646, column 2, paragraphs 2 and 3).

As to claim 19, Vuppala discloses the method of claim 17 wherein modeling comprises:

populating a database with an entry indicating an ability of an RPP to transmit data(see page 642, column 2, paragraph 4 to page 643, column 1, lines 1-29 and page 648, column 1, lines 3-4).

As to claim 20, Vuppala discloses the method of claim 19 wherein modeling further comprises: creating a data structure for each flow directed to a remote physical port (see page 642, column 2, paragraph 4 to page 643, column 1, lines 1-29 and page 648, column 1, lines 3-4);and

manipulating the data structure to indicate eligibility of a transmission unit consistent with the ability of the RPP to transmit data(see page 642, column 2, paragraph 4 to page 643, column 1, lines 1-29 and page 648, column 1, lines 3-4).

As to claim 21, Vuppala discloses the method of claim 17 further comprising: statistically multiplexing the flows from the plurality of RLPs to the plurality of RPPs (see fig. 2 and page 643, column 2 paragraphs 4 to page 644, line 16).

AS to claim 22, Vuppala discloses the method of claim 17 wherein a one-to-one correspondence exists between the RLPs and the RPPs (see fig. 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vuppala as applied to claim 1 discussed above and further in view of Bjornberg et al., U.S. Patent No. 6,496,567[hereinafter Bjornberg].

As to claim 11, Vuppala discloses substantial features of the claimed invention as discussed above with respect to claim 1, including an apparatus with virtual network port interface to a set of remote networks or nodes.

Vuppala is silent regarding: the virtual network port comprising one of an OC-3 port and a DS-3 port.

Bjornberg discloses a system for dynamic allocation of network ports, where the networks ports comprise one of an OC-3 port and a DS-3 port (see fig. 2 and col.4, lines 43-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize presented with teaching of Vuppala to utilize one of an OC-3 port and a DS-3 port as taught by Bjornberg, because the advantage of using one of an OC-3 port and a DS-3 port is that OC-3 ports and a DS-3 ports are known to provide more capacity and carry more traffic.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salad E Abdullahi whose telephone number is 703-308-8441. The examiner can normally be reached on 8:30 - 5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 703-305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should mailed to:

Box AF

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to: (703) (872-9306).

Abdullahi Salad

Examiner AU 2157

6/5/2004